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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/603,528  
Filing Date: June 25, 2003  
Appellant(s): QUIGLEY ET AL.

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Quigley et al  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/17/2009 appealing from the Office action mailed February 11, 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,605,126	Hofmann et al	2-1997
6,539,910	Gaiser et al	4-2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 42, 43 and 45-49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation as set forth in the claims of "the sidewall portion extending parallel to the centerline..." is a new matter *since the original specification disclosed* the sidewall portion extending "*substantially parallel*" to the centerline (page 8, lines 4-5).

Claims 35-43 and 45-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaiser (US 6 539 910) in view of Hoffmann (US 5 605 126).

Gaiser discloses a piston with an annular surface (14). A combustion bowl is defined by a circumferential sidewall and a bottom wall portion. The sidewall has a sharp edge at the intersection with the annular surface (14) and substantially parallel to the centerline. An upward flared portion is located between the sharp portion and the rounded portion (18). However,

Gaiser does not show the use of a solid head portion of a piston. Hoffmann shows that the provision of a solid piston head is old and well known in the art. Since the prior art references art from the same field of endeavor, the purpose disclosed by Hoffmann would have been recognized in the pertinent art of Gaiser. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the device of Gaiser with the solid head as taught by Hoffmann.

#### **(10) Response to Argument**

The crux issues in this application are 1) whether Gaiser shows the limitation of the sidewall portion extended “substantially parallel to the center line”, 2) whether the meaning of “substantially parallel” should be the same as “parallel” and 3) whether the amended claimed language “parallel” is supported by the specification/drawings although the specification stated as a “substantially parallel” (page 8, lines 4-5 in applicant's specification).

Appellants argues that Gaiser (US 6 539 910) does not teach the use of the “sidewall portion extended *parallel* to the center line” because Gaiser shows the sidewall *substantially parallel* to the center line. Appellants further argues that the scope of words “substantially parallel” and “parallel . . .” should be the same in this instant invention although appellants tried to overcome the prior art by eliminating the word “substantial.” The examiner disagreed because the structural limitations of the two claimed limitation language would be quite different. According to the Merriam-Webster's collegiate dictionary, 10<sup>th</sup> edition, the definition of “substantial” is described as “being largely but not wholly that which is specified.” The structural limitation of “the sidewall portion includes the sharp edge extended *substantially*

*parallel* to the center line does not require that the sidewall and the centerline should be parallel. Thus, the meaning of "substantially parallel" is that the sidewall is parallel to the centerline with a margin for manufacturing tolerances, i.e. it could be off by a couple of degrees one way or the other. By changing the limitation to "parallel", there would be no manufacturing tolerances. Thus, the appellants are claiming a new specific structure, which is not disclosed/supported by the original specification and has not taught how one of ordinary skill in the art could manufacture this device without accounting for the manufacturing tolerances. Moreover, appellants argue that the selected definition for "substantial" is flawed because the Examiner selected the definition for the adjective "substantial" rather than a definition for the adverb "substantially," with no statement as to why the selected definition should be deemed the most appropriate. Furthermore, appellants argue that the relevant meaning of "substantially" is whatever the term means to one of skill in the art, and not necessarily what the dictionary states. Thus, the term "substantial parallel" would mean "to a great extent or degree parallel", which combined with a parallel drawing FIG. 2, and a slightly off-parallel drawing FIG. 3, would be understood by one of skill in the art to include an embodiment that was actually parallel. The examiner disagrees because absent any written description in the reference specification of quantitative values, arguments based on measurement of a drawing are futile in providing anticipation of a particular length. In *Re Wright*, 193 USPQ 332, 335

The appellants further argue that the interpretation of features from the drawings was fully compliance with the decision of *In Re Wright*. In *re Wright* stated that length measurements and size ratios cannot be utilized from drawings that are not indicated to be drawings made to scale. In the present case, parallelism is a geometric construct and not a sizing

construct. The examiner disagrees with the appellants' interpretation about In Re Wright decision because the decision of In Re Wright is not limited to the measurement of the length or size in the features if the drawings are not to scale. Thus, any measurements include geometric construction, angles, length and size, from not scaled drawings should be futile.

Appellants argue that there is no suggestion to combine the Hoffmann reference with the Gaiser reference because the Gaiser reference would not operable without oil gallery. The examiner disagrees because there is no requirement that a motivation to make the modification must be expressly articulated. The test for obviousness on a combination of references is what the secondary reference would teach one skilled in the art and not whether its structure could be bodily substitute in the basic reference structure. In re Richman, 57 CCPA 1060, 165 USPQ 509 (1970). Both references are related to a piston structures for diesel engine and having a lubricant system. The purpose of providing the oil gallery in the piston in Gaiser is to cool the piston, effectively. With or without providing an oil gallery in the piston for cooling the piston, both pistons would be operable.

Appellant argues that Gaiser does not show "a sharp edge portion extending in a direction *parallel* with said centerline." However, the appellants clearly state that the upstanding wall 62 is *substantially parallel* to the centerline X (See page 8, lines 4-5 in the specification). Again, the examiner disagreed because Gaiser clearly shows the sharp edge portion is *substantially parallel* to the centerline X. Furthermore, the amended structural limitations of the two claimed limitation language would be quite different as explained above.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/John T. Kwon/  
Primary Examiner, Art Unit 3747

Conferees:

/Stephen K. Cronin/  
Supervisory Patent Examiner, Art Unit 3747

/Thomas Denion/  
Thomas Denion, SPE, AU 3748